

### **ABSTRACT OF THE DISCLOSURE**

Disclosed is a wavelength division multiplexer/demultiplexer having a grating for demultiplexing a multiplexed optical signal, an input waveguide and an output waveguides. The input waveguide comprises a first sub-waveguide having a width that gradually increases in a progressing direction of the optical signal and a second sub-waveguide having a width that gradually decreases in the progressing direction of the optical signal passing through the first sub-waveguide. Since the inputted optical signal within the increased portion of the input waveguide has an expended bandwidth and the inputted optical signal within the decreased portion of the input waveguide has a reduced side lobe, an interference effect is prevented, which may be generated between neighboring channels, and improves quality of the optical signal transmitted and received in a wavelength division multiplexed (WDM) optical communication network.